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Action reveals that the citations were initialed by the Examiner, indicating that the citations were considered. However, all but four citations also had a line drawn through them, indicating that they were not in conformance and were not considered. Since it appears that some citations were both considered and not considered, and other citations were considered despite Office Action allegations to the contrary, it is unclear as to what problem exists with the listed citations. Perhaps it would be more helpful to be specific as to the deficiencies of the information disclosure statement so that Applicant can appropriately respond to the Office Action. In the meantime, a supplemental information disclosure statement and all references cited in the supplemental information disclosure statement are being submitted herewith for the Examiner's consideration.

For the Claims:

The 6 November 2003 Office Action rejected claims 1-20. Applicant respectfully requests reconsideration of the above-referenced application in view of the following discussion.

This Office Action has rejected claims 1, 3-4, and 8-9 under 35 U.S.C. 103(a) as being unpatentable over *Iijima et al.*, U.S. Pat. No. 5,708,307 (hereinafter *Iijima*) in view of *Takagi et al.*, U.S. Pat. No. 6,285,948 (hereinafter *Takagi*). *Iijima* teaches of an anti-theft car protection system that includes a transmitter-receiver for receiving a code of a specialized key, the key having a transponder built therein. The transponder includes an EEPROM for storing an ID number of the key. When the *Iijima* receives a code of the key, an immobilizer unit compares the code as received with a code as registered. When the codes coincide, the immobilizer unit transmits an engine start permission signal to an engine control unit so that the engine is enabled to start.

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Takagi teaches of an engine control apparatus, in which a control program is stored in a non-volatile rewritable memory. The control program may be rewritten by a rewriting tool following 1) a match between a key identification code from a vehicle key and a key reference code stored in the non-volatile rewritable memory, and 2) a match between a program identification code from the rewriting tool and a program reference code stored in the non-volatile rewritable memory. Takagi further teaches that the vehicle key is an electronic-type key which is provided with a transponder that includes a key identification code exclusive to the key. However, Takagi explains that the transponder may alternatively be provided separately from the key.

The Office Action alleges that *Iijima* teaches the limitations recited in independent claim 1 of the above-identified application, except for the transponder circuit being separate from the ignition key for detecting the excitation signal and radiating the return signal. However, the Office Action alleges that *Takagi* teaches of a transponder circuit separate from the ignition key. The Office Action concludes that it would have been obvious to separate the transponder circuit from the ignition key, as disclosed by *Takagi*, into the system of *Iijima* because "Takagi et al. teach separating the transponder from the key as an alternative to combining the two in order to achieve the same end result."

Well-established patent practice dictates that a modification that would render a device unworkable for its intended purposes provides strong evidence supporting a failure to suggest such a modification. As stated in National Tractor Pullers Assn., Inc. v. Watkins, 205 USPQ 892 at 911 (ND ILL, March, 1980):

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A modification of a prior art patent or device which would render that device unworkable for its intended purposes cannot be said to suggest such a modification. (emphasis supplied)

Prior art anti-theft car protection systems, as discussed by *Iijima*, include ID collation processes in which an ID number of the vehicular key is transmitted when inserting the key into a key cylinder, and start of an engine is permitted only when the ID number coincides with a previously registered one. *Iijima* has determined that a problem with one such prior art system is that if the CPU (which carries out key collation) malfunctions, then start of the engine is impossible even if the key is operated to an ignition turn-off position, then back to an ignition turn-on position again (col. 1, lines 50-65). Consequently, a purpose of the *Iijima* system is to provide an anti-theft protection system which ensures start of the engine without repetition of key operation and inconvenience regarding the anti-theft protection system as long as the key as applied is a formal one (col. 1, line 66, through col. 2, line 4).

To that end, *Iijima* discloses multiple embodiments of an anti-theft protection system, all of which require a specialized, i.e., formal, key. The key of the first four embodiments includes a built-in transponder that transmits an identification code upon reception of an incoming signal. Comparison (collation) is subsequently carried out between the ID code of the key and an ID code stored in the anti-theft system. When the two codes coincide the engine operation is permitted, and when the two codes do not coincide, engine operation is prohibited. The key of the fifth embodiment includes a built-in chip having a proper code stored therein which is read by a specialized cylinder. The fifth embodiment further includes a portable equipment that includes a transponder. The purpose of the portable equipment with its proper code is to detect unfair entry

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into the vehicle. Thus, engine operation is only permitted when ID codes for both the portable equipment and the key are proper, so as to prevent engine start by unfair means such as a shape forgery of the formal key, or by destruction of the key cylinder through a door opened by breaking the window glass (col. 22, lines 36-62).

Iijima fails to teach or suggest the desirability of modifying the *Iijima* anti-theft car protection system to include a transponder circuit separate from the ignition key, as recited in independent claim 1. Indeed such an allegation is contrary to the express purposes of *Iijima*. *Iijima* requires a specialized key to prevent car theft by shape forgery of the mechanical key. If the *Iijima* anti-theft car protection system was modified to separate the transponder circuit from the ignition key, as taught by *Takagi*, the *Iijima* system would be rendered unworkable for its intended purpose of preventing car theft by shape forgery of the mechanical key. Since *Iijima* would be rendered unworkable for its intended purpose, *Iijima* cannot suggest the desirability of modifications which make the *Iijima* anti-theft car protection system more closely resemble Applicant's invention of claim 1, despite Office Action allegations to the contrary.

As further stated in In re Bisley, 94 USPQ 80, 86-87 (C.C.P.A. 1952):

Moreover, the conception of a new and useful improvement must be considered along with the actual means of achieving it in determining the presence or absence of invention....The discovery of a problem calling for an improvement is often a very essential element in an invention correcting such a problem; and though the problem, once realized, may be solved by use of old and known elements, this does not necessarily negative invention.

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The Background of the Invention section of Applicant's specification details several problems associated with prior art transponder-based immobilizer systems, such as that taught by *Iijima*. Most specifically, when the transponder is embedded on the key, the vehicle owner cannot readily have a duplicate key made. Rather, the vehicle owner is required to obtain duplicate keys through the vehicle dealer or through an authorized provider, which is inconvenient for the vehicle owner and significantly more expensive than merely having a duplicate key made at a local hardware store. In addition, if the key with the embedded transponder is stolen, such as in a home robbery where the thief finds the vehicle keys setting in the home or in a car jacking in which the thief takes the key from the driver, the thief can still start the car. Yet another problem arises with these prior art systems in that they are only provided in new vehicles, and cannot be readily adapted for use with older model vehicles, collectable vehicles, a fleet of vehicles, and such.

Applicant has conceived of a new and useful improvement to correct the problems associated with these transponder-based, specialized key immobilizer systems. This new and useful improvement entails the use of a transponder circuit which is separate from the ignition key, as recited in claim 1. Accordingly, although the present invention employs proximity sensing using an interrogator circuit and transponder circuit system to selectively enable an ignition system, the transponder circuit is necessarily separate from the ignition key so that if a thief obtains a key for the vehicle, the thief will be prevented from readily starting the vehicle. In addition, since there is no need for a specialized key, it is readily installed and is a cost effective, aftermarket device for protecting older vehicles from theft.

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It is improper to combine the teachings of *Iijima* and *Takagi* to render obvious Applicant's invention of independent claim 1 because *Iijima* would be rendered unworkable for its intended purpose. Moreover, the *Iijima* system utilizing a specialized key, necessary to the invention of *Iijima*, suffers from the very problems Applicant's invention of claim 1 corrects. Accordingly, for the reasons set forth above, independent claim 1 is believed to be allowable over *Iijima* and *Takagi*. Claims 2-14 depend directly or indirectly from claim 1. Accordingly, claims 2-14 are believed allowable for the reasons set forth above.

Claim 2 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi* as applied to claim 1, and further in view of *Tuttle* (U.S. Pat. No. 6,112,152). Claims 5-6 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi* as applied to claim 4, and further in view of *Tallman et al.* (U.S. Pat. No. 6,175,308). Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi* as applied to claim 4, and further in view of *Strohbeck* (U.S. Pat. No. 6,580,972). Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi* as applied to claim 1, and further in view of *Weber* (U.S. Pat. No. 3,784,839). Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi* and *Weber* as applied to claim 10, and further in view of *Flanagan* (U.S. Pat. No. 3,864,651). Claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi*, *Weber*, and *Flanagan* as applied to claim 11, and further in view of *Hansen* (U.S. Pat. No. 4,412,267). Claim 13 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi*, *Weber*, and *Flanagan* as applied to claim 11, and further in view of *Dodd et al.* (U.S. Pat. No. 5,313,189). Claim 14 was rejected under 35 U.S.C. §103(a) as being

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unpatentable over *Iijima* in view of *Takagi* as applied to claim 1, and further in view of *Bryant et al.* (U.S. Pat. No. 5,155,494).

As discussed above, claims 2-14 depend from independent claim 1. Claim 1 is believed allowable over the *Iijima* and *Takagi* references. Accordingly, claims 2-14 are allowable notwithstanding the additionally cited references.

In addition, claim 6 is believed allowable for independent reasons. Claim 6 recites the limitation of the input for receiving a predetermined authorized identification code is an antenna configured for radio frequency communication with an external programming device, the external programming device providing the predetermined authorized access code.

The Office Action alleges that *Tallman et al.* (hereinafter *Tallman*) discloses an input that is an antenna configured for radio frequency communication with an external programming device, the external programming device providing the predetermined authorized code. The Office Action cites col. 6, lines 34-63 as evidence of this alleged disclosure. The cited passage teaches of a tracking unit or reader (240) that receives location signals from assorted IR transmitters (220). Upon receipt of a location signal, the reader generates a watchdog signal. The watchdog signal includes a unique reader identification code and the two most recently received location signals. The watchdog signal is transmitted via an internal wire antenna (252). The passage further teaches that the reader includes a data port for connection via a cable to an external programming device for programming the data processor of the reader.

The cited passage teaches of the antenna (252) being used for transmission from the reader (240). In addition, the cited

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passage teaches of programming the reader via a wired connection. However, the cited passage utterly fails to teach or suggest of radio frequency communication with an external programming device. That is, although *Tallman* teaches of an RF transmitter (250) in communication with the antenna (252), *Tallman* does not teach of a corresponding RF receiver in communication with the antenna (252). *Tallman* fails to teach or suggest of an RF receiver in communication with the antenna, and *Tallman* fails to teach or suggest of receiving a predetermined authorized identification code via the antenna (252). Consequently, an improper combination of *Iijima* and *Takagi* and further in view of *Tallman* fails to render obvious Applicant's invention of claim 6. Thus, claim 6 is believed to be allowable over an improper combination of *Iijima*, *Takagi*, and *Tallman*.

Independent claim 15 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi*. Claims 16-17, which depend from claim 15, were presumably rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi* and further in view of *Tallman*.

Independent claim 15 includes the limitation of a data carrier being separate from the ignition key. Accordingly, claim 15 is believed allowable for the detailed reasons set forth in connection with claim 1. Claims 16-17 depend from claim 15, and are believed allowable for the reasons set forth above.

Independent claim 18 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi*. In addition, claim 19, which depends from claim 18, was presumably rejected under 35 U.S.C. §103(a) as being unpatentable over *Iijima* in view of *Takagi* and further in view of *Bryant*. Claim 20, which depends from claim 18, was presumably rejected under 35 U.S.C. §103(a) as

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being unpatentable over *Iijima* in view of *Takagi, Weber, Flanagan, Hansen, Dodd, and Bryant*.

Independent claim 18 also includes the limitation of a data carrier being separate from the ignition key. Accordingly, claim 18 is believed allowable for the detailed reasons set forth in connection with claim 1. Claims 19-20 depend from claim 18, and are believed allowable for the reasons set forth above.

Applicant believes that the foregoing remarks are fully responsive to the rejections recited in the 6 November 2003 Office Action and that the present application is in a condition for allowance, including originally filed claims 1-20. Accordingly, reconsideration of the present application is respectfully requested.

Respectfully submitted,



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